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10/593,065	07/30/2007	Nobuhiro Mizuno	08178.0038	6472

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER	
CHANG, LI WU	

ART UNIT	PAPER NUMBER
2142	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,065	MIZUNO ET AL.	
	Examiner	Art Unit	
	LIWU CHANG	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/12/2006; 09/21/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-15 are pending.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 15 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 15 is directed to a program ([0018], [0050], [0051], and [0104] in specification). A program may include embodiments solely consisting of software code, which is not statutory subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6, 10-12, 114-15 are rejected under 35 U.S.C. 102(e) as being anticipated by **Osborn** et al. (US Patent No. 7254747 B2), hereinafter Osborn.

4. With respect to claim 1, Osborn discloses a vehicle information processing system for using a Bayesian network model to provide a probabilistically appropriate recommendation to a recipient who receives the recommendation, the recipient being an occupant (Osborn: Col 1, lines 6-15, wherein a complex system includes a vehicle information processing system) comprising:

a model storage unit containing a plurality of different Bayesian network models depending on the recommendation-condition, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation (Osborn: wherein a model storage unit, component 56 in Fig. 2, containing a plurality of different Bayesian network models, e.g., Col 8, lines 49-51, depending on the recommendation-condition, e.g., serviceable event, Col 2, lines 22-24, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation, e.g., Col 8, lines 25-26);

a model determining unit for determining a model corresponding to the recommendation-condition as an application model from the models stored in the model storage unit (Osborn: a model determining unit, e.g., the model selection module, component 62 in Fig. 2, for determining a model corresponding to the recommendation-condition as an application model from the models stored in the model storage unit, e.g., Col 2, lines 20-23);

a reasoning unit for reading out the application model determined by the model determining unit from the model storage unit and for obtaining a recommendation through probabilistic reasoning that uses the read-out application model (Osborn: a reasoning unit, e.g., the model, component 64 in Fig. 2, for reading out the application model determined by the model determining unit from the model storage unit and for obtaining a recommendation through probabilistic reasoning that uses the read-out application model, e.g., Col 7, lines 38-40); and

a recommending unit for providing the recommendation obtained by the reasoning unit to the recipient (Osborn: a recommending unit, e.g., the model module, component 64 in Fig. 2,

for providing the recommendation obtained by the reasoning unit to the recipient, e.g., lines 38-40).

5. With respect to claim 2, Osborn discloses wherein

the model storage unit contains a plurality of different Bayesian network models depending on the attribute of the recipient, and

the model determining unit determines a model corresponding to the attribute of the recipient as the application model (Osborn: Col 8, lines 49-51, describe the Bayesian network models, and Col 7, lines 13-19 and 22-24, and Col 8, lines 33-36, describe the references, including attributes, used in model building).

6. With respect to claim 3, Osborn discloses wherein

the model storage unit contains a plurality of different Bayesian network models depending on the situation in which the recommendation is provided, and

the model determining unit determines a model corresponding to the situation in which the recommendation is provided as the application model. (Osborn: Col 9, lines 5-10, describe determining

the recommendation corresponding to the situation, e.g., requests of downtime, cost.)

7. With respect to claim 4, Osborn discloses

a select-model storage unit containing a select-model applied to probabilistic reasoning for determining the application model from the models based on the attribute of the recipient and the situation in which the recommendation is provided (Osborn: a select-model storage unit, e.g., component 62 in Fig. 2, containing a select-model applied to probabilistic reasoning for determining the application model, e.g., Col 7, lines 38-40 and Col 8, lines 49-51, from the models based on the attribute of the recipient and the situation in which the recommendation is provided, e.g., Col 7, lines 13-19 and 22-24, and Col 8, lines 33-36),

wherein the model determining unit determines the application model through the probabilistic reasoning that uses the select-model read out from the select-model storage unit, based on the attribute of the recipient and the situation in which the recommendation is

provided (Osborn: e.g., Col 7, lines 28-32, describe model selection).

8. With respect to claim 5, Osborn

a response receiving unit for receiving a response made by the recipient when the recommending unit provides the recommendation obtained by the reasoning unit from the application model (Osborn: a response receiving unit, the analysis module, component 96 in Fig. 5, for receiving a response made by the recipient when the recommending unit provides the recommendation obtained by the reasoning unit from the application model, e.g., Col 12, lines 15-20 and Col 17, lines 14-18); and

a model learning unit for learning models stored in the model storage unit using the response received by the response receiving unit and for updating the models to models specialized for each recommendation-condition (Osborn: a model learning unit, e.g., component 50 in Fig. 2, wherein the employed software tool Hugin Expert, Col 8, lines 34-36 includes learning functions, for learning models stored in the model storage unit, e.g., as shown by arrow 14

in Fig. 2, using the response received by the response receiving unit, Col 7, lines 49-52, and for updating the models to models specialized for each recommendation-condition, e.g., Col 7, lines 52-55).

9. With respect to claim 6, Osborn discloses

a learning model information storage unit containing the learning models in association with the application model applied to the probabilistic reasoning in the reasoning unit, wherein the learning models comprises, among the models stored in the model storage unit, a model identical with the application model and a different model influenced by the result of the reasoning that uses the application model (Osborn: Fig. 2 indicates the learning models, e.g., from component 50, associated with application models, from components 52-64, to be probabilistically represented, Col 8, lines 49-51), wherein the learning models comprises, among the models stored in the model storage unit, a model identical with the application model and a different model influenced by the result of the reasoning that uses the application model (Osborn: Col 7, lines 45-55, a different model, e.g., a refined model), and

the model learning unit learns models using the response received by the response receiving unit (Osborn: Fig. 5 indicates the model learning unit, component 50 in Fig. 2, learns models using the response received by the response receiving unit, e.g., the analysis module, component 96 in Fig. 5), wherein the models are associated with the application model as the learning models in the learning model information storage unit (Osborn: Fig. 2 indicates such an association from application model to the learning model, e .g., the refined model).

10. With respect to claim 10, Osborn discloses

information recommending devices (Osborn: system 10, in Fig. 1), each having the recommending unit (Osborn: e.g., the model application module and recommendation and the report module, components 92 and 94 in Fig. 4);

and a center device communicatively connected with the information recommending devices (Osborn: Fig. 1, a center device, e.g., analysis/service module, component 26, communicatively connected with the information recommending devices, e.g., the

model application module and recommendation and the report module, components 92 and 94 in Fig. 4),

wherein the center device collects from each information recommending device the response received from the recipient when the recommendation is provided (Osborn: Fig. 5 indicates the collection).

11. With respect to claim 11, Osborn discloses a vehicle information processing system for using a reasoning algorism to reason out a recommendation appropriate for a recipient who receives the recommendation, the recipient being an occupant, and for providing the recommendation obtained through the reasoning, (Osborn: Col 1, lines 6-15, wherein a complex system includes a vehicle information processing system) further comprising:

a resource storage unit containing a plurality of different resources for calculation depending on the recommendation-condition, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation (Osborn: a resource storage unit, component 56 in Fig. 2, containing a plurality

of different resources, e.g., Bayesian network models, Col 8, lines 49-51, for calculation depending on the recommendation-condition, e.g., serviceable event, Col 2, lines 22-24, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation, e.g., Col 8, lines 25-26);

a resource determining unit for determining a resource for calculation corresponding to the recommendation-condition from the resources for calculation stored in the resource storage unit (Osborn: a resource determining unit, e.g., the model selection module, component 62 in Fig. 2, for determining a resource, e.g., a probabilistic model, for calculation corresponding to the recommendation-condition from the resources for calculation stored in the model storage unit, e.g., Col 2, lines 20-23);

a reasoning unit for reading out the resource for calculation determined by the resource determining unit from the resource storage unit and for obtaining a recommendation through reasoning that uses the read-out resource for calculation (Osborn: a reasoning unit, e.g., the model, component 64 in Fig. 2, for reading out the resource, e.g., the model, for

calculation determined by the resource determining unit, e.g., the model selection module, component 62 in Fig. 2, from the resource storage unit and for obtaining a recommendation through reasoning that uses the read-out resource for calculation, e.g., Col 7, lines 38-40); and

a recommending unit for providing the recommendation obtained by the reasoning unit to the recipient (Osborn: a recommending unit, e.g., the model module, component 64 in Fig. 2, for providing the recommendation obtained by the reasoning unit to the recipient, e.g., lines 38-40).

12. With respect to claim 12, the claim is substantially the same as claim 1 and it is rejected for the same reason as in claim 1 above.

13. With respect to claim 14, Osborn discloses a vehicle information processing method for using a Bayesian network model to provide a probabilistically appropriate recommendation to a recipient who receives the recommendation, the recipient being an occupant (Osborn: Col 1, lines 6-15, wherein a complex system includes a vehicle information processing system), comprising:

a model determining step of determining a model corresponding to the recommendation-condition as an application model from a plurality of different Bayesian network models depending on the recommendation-condition, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation (Osborn: a model determining step, e.g., the step of the model selection module, component 62 in Fig. 2, of determining a model corresponding to the recommendation-condition as an application model from a plurality of different Bayesian network models depending on the recommendation-condition, e.g., Col 2, lines 20-23, Col 7, lines 13-20, Col 8, lines 49-51, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation, e.g., Col 8, lines 25-26);

a reasoning step of obtaining a recommendation through probabilistic reasoning that uses the application model determined in the model determining step (Osborn: a reasoning step, e.g., the step of the model module, component 64 in Fig. 2, of obtaining a recommendation, e.g., as shown by components 64, 62, 92 and 94 in

Fig. 4, through probabilistic reasoning that uses the application model determined in the model determining step, e.g., Col 7, lines 38-40, Col 8, lines 49-51,); and

a recommending step of providing the recommendation obtained in the reasoning step to the recipient (Osborn: a recommending step, e.g., the step of the model module, component 64 in Fig. 2, for providing the recommendation obtained by the reasoning step to the recipient, e.g., lines 38-40).

14. With respect to claim 15, the claim is substantially the same as claim 1 and it is rejected for the same reason as in claim 1 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. .Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Osborn**, as applied to claims 1 and 5 above, and in view of **Horvitz** et al. (US Publication No. 2004/0076936 A1), and hereinafter Horvitz.

16. With respect to claim 7, Osborn does not disclose wherein the learning model information storage unit contains reflection parameters indicating the degree to which the response is reflected in learning of the learning models, wherein each reflection parameter is set for each of a plurality of learning models corresponding to one application model, and the model learning unit performs learning processing such that a reflection parameter associated with a learning model to be learned is read out from the learning model information storage unit and the response is reflected in the learning model to the degree according to the read-out reflection parameter.

In the same field of endeavor, Horvitz discloses wherein

the learning model information storage unit contains reflection parameters indicating the degree to which the response is reflected in learning of the learning models (Horvitz: the learning model

information storage unit, e.g., components 135, 138 and 139, in Figure 1, and the reflection parameter, e.g., the alpha value in EQ(2), [0084]), wherein each reflection parameter is set for each of a plurality of learning models corresponding to one application model (Horvitz: e.g., [0090] indicates an alpha in a learning model corresponding to one application model, e.g., personality type generation process in [0094]), and

the model learning unit performs learning processing such that a reflection parameter associated with a learning model to be learned is read out from the learning model information storage unit and the response is reflected in the learning model to the degree according to the read-out reflection parameter (Horvitz: the model learning unit, e.g., components, 134, 137, 140 and 146 in Figure 1, reflection parameter may be read out from database 135 in Figure 1, and EQ(2) shows the response is reflected in the learning model to the degree controlled by the parameter alpha).

It would have been obvious for one skilled in the art at the time of invention to incorporating teachings of Horvitz with teachings of

Osborn by including the reflection parameter to control and weigh the feedback responses, because taking the variability of feedback responses into account could provide enhanced functionality and serviceable conditions for refined probabilistic models.

17. With respect to claim 8, Osborn does not disclose a learning data obtaining unit for obtaining learning data used in learning by which the models specialized for each recommendation-condition through the learning by the model learning unit is brought closer to a general model; the model learning unit uses the learning data obtained by the learning data obtaining unit to learn the models stored in the model storage unit.

However, Horvitz discloses

a learning data obtaining unit for obtaining learning data used in learning by which the models specialized for each recommendation-condition through the learning by the model learning unit is brought closer to a general model (Horvitz: a general model, e.g., a posterior probabilistic model or true value, as in Abstract, line 11, and recommendation-condition, e.g., item rating

or preferences as in Abstract, lines 7-8, a learning data obtaining unit, e.g., components 134 and/or 137 in Figure 1);

the model learning unit uses the learning data obtained by the learning data obtaining unit to learn the models stored in the model storage unit.

(Horvitz: the model learning unit, e.g., components, 134, 137, 140 and 146 in Figure 1, uses the learning data obtained by the learning data obtaining unit, e.g., components 134 and/or 137 in Figure 1, to learn the models stored in the model storage unit, e.g., probabilistic models for [0094] or [0096], EQ(5).)

It would have been obvious for one skilled in the art at the time of invention to incorporating teachings of Horvitz with teachings of Osborn by including the reflection parameter to control and weigh the feedback responses, because taking the variability of feedback responses into account could provide enhanced functionality and serviceable conditions for refined probabilistic models.

18. With respect to claim 9, Horvitz discloses

a learning reflection parameter storage unit containing learning reflection parameters indicating the degree to which the learning data is reflected in learning of the models (Horvitz: a learning reflection parameter storage unit, e.g., component 135, containing learning reflection parameters, e.g., the parameter alpha in EQ(2), indicating the degree to which the learning data is reflected in learning of the models, e.g., the parameter alpha tuning the probability distribution as in [0084][0085]), wherein

the model learning unit performs learning processing such that the learning data is reflected in learning of the models to the degree according to the learning reflection parameter read out from the learning reflection parameter storage unit (Horvitz: either EQ(4) or EQ(5) shows the learning data, e.g., the ratings or preferences, Abstract, line 8, is reflected in learning of the models to the degree according to the learning reflection parameter, e.g., parameter alpha).

19. .Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Osborn**, as applied to claim 12 above, and in view of **Jammu** (US Publication No. 2003/0018600 A1), and hereinafter Jammu.

20. With respect to claim 13, Osborn does not expressly disclose wherein the device is provided in a car. However, Jammu discloses wherein the device is provided in a car (Jammu: [0020], [0027], indicate application in cars or a car).

It would have been obvious for one of ordinary skill in the art at the time of invention to incorporate the teachings of Jammu with the teachings of Osborn by including the application of Jammu, because Jammu's application teaches the recommendation of a decision provided in a complex system that is also an objective of Osborn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIWU CHANG whose telephone number is 571-270-3809. The examiner can normally be reached on 8:30AM - 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on 571-272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. C./ May 12, 2008
Examiner, Art Unit 2142

/David R Vincent/

Supervisory Patent Examiner, Art Unit 2129